



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Hessell et. al.

Art Unit : 1764

Application No. : 09/898,844

Examiner : Walter D. Griffin

Filed : July 3, 2001

For: : **COMPOSITIONS OF GROUP II AND/OR GROUP III BASE
OILS AND ALKYLATED FUSED AND/OR POLYFUSED
AROMATIC COMPOUNDS.**

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Mail Stop: Amendment

I, Edward T. Hessell declare and state as follows:

1. I received a Bachelor of Science degree in Chemistry in 1984 from the University of Connecticut in Storrs, Connecticut. From 1984 to 1987 I worked as a research chemist for Ciba Geigy Corp. Thereafter, I was awarded a Ph.D. in Chemistry in 1991 from the University of Rochester in Rochester, New York. Upon receiving my doctorate, I was employed for three years as a Senior Chemist for Texaco Inc. specializing in research and development for additives in motor oils.
2. From 1994 to date, I have been employed by King Industries Specialty Chemicals in Norwalk, Connecticut. I was a Senior Research Chemist, Research and Development Manager for Lubricant Additives, and was promoted to Manager for Specialty Markets in the Research and Development Division in 2002.

3. I am a co-inventor of U.S. Patent Application 09/898,844 and submit this declaration in support thereof. I have conducted additional experimental work to demonstrate that the subject base oil blends of our application are distinct from, and provide unique performance advantages over, the matter claimed in Yoshida et. al. (US 4,714,794) (herein after referred to as Yoshida).

I. THERMO-OXIDATIVE STABILITY OF ALKYLATED NAPHTHALENE/GROUP III BASE OIL BLENDS

1. The specification and claims of Yoshida refer to alkylated naphthalenes possessing a single alkyl group wherein the alkyl group has a total carbon number of 6-24 (see column 2, lines 40-60 and compositions of Examples 1 through 3, and claim 1). I chose Mono(tripropyl) naphthalene (comparative example 9), Mono(dodecyl) naphthalene (comparative example 10), and Synnestic[®] 5 (comparative example 10) to represent Yoshida in the experiment because they are consistent with Yoshida's claims.

2. The following table provides results of experiments done under my control and supervision and demonstrates the comparative oxidation induction times from Pressure Differential Scanning Calorimetry (PDSC) at 160 °C under 150 PSI of air of three polyalkylated naphthalene lubricants of the present invention, an alpha-olefin naphthalene (Example 11) and the chosen Yoshida lubricants:

Table A. Pressure Differential Scanning Calorimetry Induction Times for Blends Containing 20 wt% Alkylated Naphthalenes in a 7 cSt Group III Base Oil at 160 °C Isothermal with 150 PSI Air

Example	Alkylated Naphthalene in Blend	Structure/Composition Of Alkylated Naphthalene	Olefin used as alkylating agent	Induction Time at 160 °C
Example 11 of US patent application 09/898,844	Alkylated Naphthalene 1 of US patent application 09/898,844	NALUBE [®] KR-012, a polyalkylated naphthalene	Alpha-olefin	18
Example 12 of US patent application 09/898,844	Alkylated Naphthalene 2 of US patent application 09/898,844	NALUBE [®] KX-1070, a polyalkylated naphthalene	Branched and linear C8-C10 internal olefin, rich in C9 internal olefin	48
Example 13 of US patent application 09/898,844	Alkylated Naphthalene 3 of US patent application 09/898,844	A polyalkylated naphthalene	Branched and linear C11-C13 internal olefin, rich in C12 internal olefin	>80
Comparative Example 9	Mono(tripropyl) naphthalene, consistent with claims of Yoshida	A monoalkylated naphthalene	Branched and linear C8-C10 internal olefin, rich in C9 internal olefin	9
Comparative Example 10	Mono(dodecyl) naphthalene, consistent with claims of Yoshida	A monoalkylated naphthalene	Alpha-olefin	39
Comparative Example 11	Synnestic [®] 5, consistent with claims of Yoshida	A monohexadecenyl alkylated naphthalene	Alpha- olefin	15

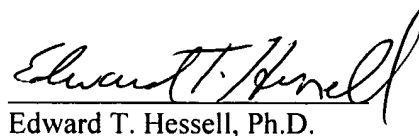
3. The results reported in Table A demonstrate the surprising improvement in thermo-oxidative stability obtained from the polyalkylated naphthalenes derived from the alkylation of naphthalene with an internal olefin (Examples 12 and 13) over both

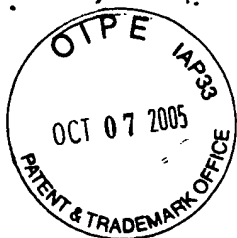
polyalkylated naphthalenes derived from alkylation of naphthalene with an *alpha*-olefin (Example 18) and all monoalkylated naphthalenes (Comparative Examples 9-11). The surprising performance is evident in the significantly higher induction times of Examples 12 and 13.

4. This phenomenon is unique to the polyalkylated naphthalenes derived from alkylation of naphthalene with internal olefins in that the mono(tripropylene) alkylated naphthalene (Comparative Example 9; a mono-alkylated naphthalene derived from the alkylation of naphthalene with a C9 rich internal olefin mixture) does not display an improvement in thermo-oxidative stability over the corresponding mono-alkylated naphthalenes derived from alkylation of naphthalene with *alpha*-olefins (comparative Examples 10 and 11).

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-referenced application or any patent issuing thereon.

Date: 10/6/2005


Edward T. Hessell, Ph.D.



Attorney's Docket No. K-4

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,
CONTINUATION OR CIP)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type: (check one)

- ☒ original
☐ design

(check one, if applicable)

- ☐ national stage of PCT
☐ supplemental

- ☐ divisional
☐ continuation
☐ continuation-in-part (CIP)

INVENTORSHIP IDENTIFICATION

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

Compositions of Group II and/or Group III Base Oils and Alkylated Fused
and/or Polyfused Compounds

SPECIFICATION IDENTIFICATION

the specification of which: (complete (a), (b) or (c))

(a) ☒ is attached hereto.

(b) ☐ was filed on _____ as ☐ Serial No. _____
or ☐ Express Mail No., as Serial No. not yet known,
and was amended _____ (if applicable).

(c) ☐ was described and claimed in PCT International Application
No. _____ filed on _____ and as
amended under PCT Article 19 on _____ (if any).

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the
above identified specification, including the claims, as amended by any amendment
referred to above.

FOREIGN PRIORITY CLAIM

[] I hereby claim foreign priority benefits under Title 35, U.S.C. §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

(d) [] no such applications have been filed.

(e) [] such applications have been filed as follows

EARLIEST FOREIGN APPLICATION(S), IF ANY FILED WITHIN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION

COUNTRY	APPLICATION NO.	DATE OF FILING (month, day, year)	PRIORITY CLAIMED UNDER 35 USC 119
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[] YES [] NO

ALL FOREIGN APPLICATION(S), IF ANY FILED MORE THAN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION

CLAIM FOR BENEFIT OF EARLIER U.S./PCT APPLICATION(S) UNDER 35 U.S.C. §120

[x] I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s) or PCT international application(s) designating the United States of America that are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in those prior application(s) in the manner provided by the first paragraph of 35 U.S.C. §120, I acknowledge the duty to disclose material information as defined in 37 C.F.R. §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

Prior U.S. Application(s) or PCT International Application(s) Designating the U.S. For Benefit Under 35 U.S.C. §120.

U.S. APPLICATIONS

Serial No.	Filing Date	Status (issued, pending or abandoned) Pending
60/217,478	July 11, 2000	

PCT APPLICATIONS DESIGNATING THE U.S.

PCT Application No.	PCT filing date	U.S. Serial Nos. assigned (if any)	Status (patented, pending, abandoned)
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POWER OF ATTORNEY

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration number)

MARK FARBER Reg. No. 34,159.

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DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

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[] Check here for added signature pages for third and subsequent inventors.
Number of added pages is _____

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